

**Before the  
FEDERAL COMMUNICATIONS COMMISSION  
Washington, DC 20554**

In the Matter of	)	
	)	
Improving Public Safety Communications in the	)	
800 MHz Band	)	
	)	WT Docket No. 02-55
Consolidating the 900 MHz Industrial/Land	)	
Transportation and Business Pool Channels	)	

To: The Commission

**COMMENTS OF  
PREFERRED COMMUNICATION SYSTEMS, INC.**

**Introduction**

On March 15, 2002, the Federal Communications Commission ("FCC") released a Notice of Proposal Rule making in the matter of "Improving Public Safety Communications in the 800 MHz: Band, and Consolidating the 900 MHz Industrial/Land Transportation and Business Pool Channels, WT Docket No. 02-55." (hereinafter referred to as "NPRM").

The NPRM presents various "proposals" ("NPRM-Proposals") that are intended to improve public safety communications by reducing interference within the 800 MHz Band. The NPRM-Proposals include the relocation of incumbent 800 MHz licenses to other frequencies within the 800 MHz Band, or to frequencies in the 700 MHz or 900 MHz Bands. The adoption of any relocation plan will be financially burdensome on incumbent licenses, and depending upon the particulars of a relocation plan, would be financially devastating.

Preferred Communication Systems, Inc. and its wholly owned subsidiary Preferred Acquisitions, Inc. (hereinafter referred to as PCSI) is an interested party in this proceeding as it owns numerous site specific and geographic (Economic Area -"EA") 800 MHz licenses. PCSI's "EA Licenses" were acquired in the FCC Auction #34 and include licenses in ten difference markets. PCSI bid (and paid) approximately \$32 million to acquire these licenses in FCC Auction #34.

## **NPRM Objective**

The stated “Primary Objective” in the FCC’s NPRM is to explore all available options and alternatives for improving the spectrum environment for public safety operating in the 800 MHz Band. (Paragraph 3, page 3). “In achieving this objective the NPRM states that we (FCC) solicit proposals on how best to remedy interference to 800 MHz public safety systems consistent with minimum disruption to our existing licensing structure and assurance of sufficient spectrum for critical public safety communications” (NPRM Paragraph 2, Page 3).

In the NPRM, the FCC—“Tentatively concluded that increasing levels of harmful interference to public safety communications on the 800 MHz band must be remedied” (NPRM Paragraph 4, Page 3).

## **Summary**

PCSI summarizes its comments as follows:

- The record in this proceeding does not adequately present an interference problem with public safety users in the 800 MHz Band that justifies the relocation of incumbent licensees.
- The ability to mitigate interference that does exist in the 800 MHz Band with public safety users by means other than relocation has not yet been thoroughly explored and tested.
- Based upon the record in this proceeding, the interference in the 800 MHz Band with public safety users is caused overwhelmingly by Nextel. According to the Commission’s rules and regulations, the party causing interference with other licensees is required, at a minimum, to resolve such interference at its own cost through frequency coordination, or otherwise. PCSI believes that absent a compelling showing by Nextel that it cannot afford to eliminate, or at least minimize, such interference, the FCC should enforce strictly Sections 90.173(b) and 90.403(e) of its regulations to require Nextel to address the interference problem that it has created.

## **800 MHz BAND**

As described in the NPRM, the history of the FCC’s allocation of 800 MHz spectrum dates back to 1970 and has been sliced and diced over the past 30+ years. This is particularly true for certain segments of the 800 MHz Band, particularly the 806/851 to 824/869 frequency bands. [Note: spectrum licenses in the “800 MHz Band” use “paired” frequencies that have a 45 MHz separation between the ‘base’ and ‘mobile’ frequencies allocated to an individual license. Thus, when one refers to a license for a particular

frequency at 806 MHz (e.g. 806.0125) it is simultaneously including a “paired” frequency at 851MHz (e.g. 851.0125 MHz). There are 40 assigned individual frequencies (a.k.a. Channels) for each MHz].

The end result of numerous FCC allocations and reallocations is that there is a diverse mix of licenses crammed into a relatively small amount of spectrum. There are site-by-site licenses intended to operate within defined area in proximity to their licensed site. These “site-licenses” include various categories of radio service including Conventional Specialized Mobile Radio (“SMR”), Business, Industrial/Land Transportation (“LIT”), and Public Safety. Additionally, the FCC allocated large blocks of spectrum as geographic licenses based on defined economic areas (“EA”). The FCC’s creation of geographic “EA” blocks of spectrum was intended to enable licensees to use cellular-type architecture in deploying Enhanced Specialized Mobile Radio (“ESMR”) services that would be competitive with Cellular and PCS operators. This is consistent with numerous actions by the FCC over the past 10 years that support and accommodate the expansion of the ESMR industry (see Paragraph 9, Page 6 of NPRM).

The “site-licenses” were awarded through an application process that cost the licensees a nominal amount for filing fees. The geographic “EA licenses” were auctioned by the FCC in the fall of 2000. The “General Category” spectrum (7.5 MHz at 806/851 to 809.75/854.75) blocks were included in Auction #34, which generated \$319 million in net proceeds. The “Lower 80 Channels” (which are part of what is known as the “Interleaved” portion of the 800 MHz Band) were auctioned in blocks in Auction #36 which generated \$29 million in net proceeds.

The NPRM focuses on a total of 36 MHz of spectrum in the 800 MHz Band, which is 18 MHz of ‘base’ frequencies, paired with 18 MHz of ‘mobile frequencies’. Attached is “Exhibit A” is the 800 MHz spectrum chart.

The 36 MHz at issue is comprised of: **(A)** 17.5 MHz that was segmented in the various contiguous blocks that accommodate ESMR, **(B)** 6 MHz of contiguous spectrum for Public Safety and **(C)** 12.5 MHz of “Interleaved” spectrum, which is allocated as: (a) 4 MHz for ESMR; (b) 3.5 MHz for Public Safety, (c) 2.5 MHz for Business and (d) 2.5 MHz for ILT.

As described above, Public Safety systems have been allocated spectrum in two characteristically different “sub-bands” within the 800 MHz Band. The first “sub-band” is the 6 MHz of continuous spectrum (821-824 / 866-869 MHz) designated for Public Safety which has become known as the “NPSPAC Band” from the FCC’s establishing of the National Public Safety Planning Advisory Committee (NPSPAC) to advise on rules for this spectrum. The second “sub-band” is the 3.5 MHz (70 Channels) that are included in what is known as the “Interleaved” sub-band. It is referred to as the “Interleaved” band since there are four different categories of radio service (Public Safety, Business, Industrial/Land Transportation and SMR) that each have slivers of varying numbers of adjacent channels that follow a repetitive pattern (See Attached Exhibit A). In the case of Public Safety, their 70 channels are divided into 5 sets of 2 adjacent channels and 20 sets

of 3 adjacent channels. This causes a Public Safety channel to be immediately adjacent to a Business/ILT channel at 29 different points and Public Safety channels to be immediately adjacent to SMR channels at 21 different points. This is noteworthy since the incidents of interference (if shown to be primarily in the “Interleaved Band”) might be cured by relocation (if relocation is deemed necessary) of only the “Interleaved” channels.

### **Solution Must Be in Balance With Underlying Problem**

The NPRM presents proposals that require the relocation of 2,100 Business and I/LT licenses and 1,100 SMR licenses. To date, very few of these affected licenses have filed comments in this proceeding, but those that have generally paint a financially devastating picture. Individual licenses have filed comments that their costs could range from hundreds of thousands to tens of millions with many commenting that the Nextel Proposal (if adopted) could put them out of business.

Before the FCC embraces a licensing relocation plan that has such extreme consequences, the record must reflect that such measures are necessary and all other solutions have fully examined and all other avenues have been exhausted.

It is appropriate that any solution be in balance with the extent of the problem. To that end, it is logical to first fully examine the extent of the problem. The Commission then should proceed through the possible solutions with an eye toward the affected parties and their associated costs and consequences.

### **Extent of the Problem**

#### ***Spectrum Used By Public Safety Systems***

In evaluating the extent of spectrum interference problems with Public Safety Communications, the starting point is understanding the entity of Public Safety spectrum. According to FCC documents, there are 47.2 MHz of spectrum allocated to Public Safety, of this amount, 9.5 MHz is in the 800 MHz Band and 37.7 MHz is below 800 MHz. In addition, the Commission recently has allocated 50 MHz in 4.9 GHz Band to Public Safety.

To translate the “MHz” to actual operating systems we looked to published information. According to the Public Safety Wireless Network (PSWN), in their monitoring of the FCC’s audit of spectrum below 512 MHz (pursuant to Public Notice DA-01-1575) there are 56,000 Public Safety licensees below 512 MHz. Furthermore, as published in a recent FCC report to Congress (“*Alternative Frequencies for use by Public Safety Systems*” – January 2002), the FCC states “..., the Commissions licensing records indicate that Public Safety entities most intensively use the frequencies lying between 150 – 174 MHz. By way of reference, surveys indicate that approximately 73% of all law

*enforcement entities and 65-70% of all fire fighting and EMS agencies operate land mobile radio systems in the 100 to 300 MHz Bands."*

The above indicates that the vast majority of Public Safety systems do not operate in the 800 MHz Band, thus they are not as risk to the interference issue of this proceeding.

The NPRM identifies the "Allocated" Public Safety spectrum in the 800 MHz Band as the NPSPAC – 6 MHz and the Interleaved 3.5 MHz (70 channels). The NPRM, however, does not identify how much of this spectrum is actually being used. This aspect is relevant since if -- (1) it is shown that interference is occurring primarily in the Interleaved 70 channels and (2) there is open spectrum in the "NPSPAC-6 MHz"; then a solution could be to move the "affected" Public Safety systems from the Interleaved channels to the NPSPAC- 6 MHz on a case-by-case basis.

### ***Number of Public Safety Systems***

The NPRM (in Appendix Two, Section C) presents that, as of 1992, there were 38,978 counties, cities and towns in the United States. One can logically assume that most of these governmental units have some sort of Public Safety system, some may be shared systems other units may have more than one system. In any event this suggests that there are tens of thousands of Public Safety systems. This is somewhat confirmed in a recent PSWN circular regarding the FCC Audit of spectrum below 512 MHz, which notes that there are 56,000 Public Safety Licenses operating below 512 MHz.

The NPRM (in Appendix Two, Section C) states that – *"There are currently 1,320 Public Safety and NPSPAC licensees who would be required to relocate their station facilities, if the NAM or Nextel Proposals described in the NPRM were adopted."*

### ***Record of Interference to Public Safety Systems***

The primary source of the NPRM's record for the incidents of interference is by way of references to the work done by APCO Project 39. This includes the *Best Practices Guide* (December 2000) and *Project 39's Interim Report to the FCC* (December 2001). Subsequent to the issuing of the NPRM, APCO Project 39 issued another report entitled *"Six-Month Status Report of the Project 39 Technical Committee"* (Released 3/19/02).

"Project 39" is a task force formed as a result of the FCC's request (in April 2000) that such a task force be created to address the interference with Public Safety systems in the 800 MHz Band. Participants include representatives from the Association of Public-Safety Communications Officials (APCO), the International Association of Chiefs of Police (IACP), the International Association of Fire Chiefs (IAFC), the Public Safety Wireless Network (PSWN), the National Association of Counties, The National Governors Association and the National League of Cities; along with industry

participants from Nextel, Motorola, AT&T, M/Z-Comm., and the Cellular Telecommunications Industry Association (CTIA).

The objectives of the Project 39 task force and their progress are stated in their most recently published Status Report (dated March 19, 2002). In the “Conclusion” section, they stated as follows:

*The Technical Committee was give the following goal for the first six months of operation:*

*The committee’s six-month goal is to have all current public safety 800 MHz interference issues catalogued, including how the problem manifests, who the contact parties are for the affected public safety agencies, what is providing the interference, how long it has been occurring and what, if anything, has been or is being done to resolve it.*

*It is our belief that to the extent our limited resources have allowed, we have fulfilled this goal. We would have liked to develop a more robust data collection and analysis process, and have staff available to do further follow-up with reporting affected parties, but with a Project funding source, this has not been possible.*

*The Committee was also give the following 12-month goal:*

*Within 12 months, the committee’s goal is to have all potential short-term interference solutions identified, tested and applied, where applicable.*

*The record and experiences documented to date put us in a position where the 12-month goal has been largely accomplished as well. While the previously described resource constraints have prevented us from achieving true national documentation of all incidences of interference events, and we have had only limited opportunity through the voluntary efforts of Project 39 participants to test and verify some of the technical details and findings, the evidence at hand does present a consistent and compelling picture. It is our belief that the various site-by-site solutions documented in our record (changing frequencies, lowering power levels, changing antenna patterns, changing transmitter combining strategies, etc.) do offer meaningful short-term relief to specific interference problems, and should be applied any time interference is identified. It does seem clear however that these measures are not adequate to address the overall problem and clearly do not address the goal of preventing interference in the first place.*

### ***Evaluating the Magnitude of the Interference Problem***

On the surface, the interference problem seems to be pervasive as the NPRM notes there has been reported interference in 25 cities and they reference Project 39's tally of reported interference in 24 states. However, we believe that an evaluation of the incidents of interference in context with all the communications systems that are theoretically involved, yields a less ominous picture.

As noted above, the Project 39 task force has been evaluating the interference issue for nearly 2 years (beginning April 2000) and has concluded that they have documented all reported cases of interference in these reports. The sum total of all of their documentation reflects 67 incidents in 27 states. We believe this is a rather statistically small number considering there are 1,320 Public Safety systems operating within the 800 MHz Band; combined with the fact that Nextel's CMRS systems cover over 80% of the U.S. population and operate on 18,300 tower sites (according to data published in the 2001 SEC 10K reports for Nextel and its affiliate, Nextel Partners.) If the interference problem was truly raging out of control (thus possibly justifying extreme measures) one would expect to see hundreds of reported cases of interference.

### ***Identification of Interfering Parties***

In reviewing Project 39's reports, we found it noteworthy that in the 67 documented cases of interference, Nextel was named as the interfering party in 52 of the cases which is 78% of the total reported ones. The interfering party in the other cases was stated as a mobile phone operator in 9 cases (which is 13%) and was an unknown source in 6 cases (which is 9%). Thus, Nextel is the interfering party in at least 78% of the reported cases and could be the interfering party in all of the cases, as they can't be ruled out as the interfering party in the cases where they were not specifically named.

### ***Mitigating Interference (Without Relocation)***

The *Best Practices Guide* was prepared to provide an outline of various steps that can be taken to mitigate interference within the 800MHz Band. A crucial question is -- "How successful are these measures?" A partial answer is that Project 39's status reports indicate that interference problems have been eliminated in certain cases by following the *Best Practices Guide*. Unfortunately, the Project 39's status reports indicate that, due to a lack of resources, they have been unable to follow-up on, and fully document, all reported cases of interference. Thus, the record is incomplete as to the ability to mitigate interference by merely implementing all the steps described in the *Best Practices Guide*.

### **Relocation of Licenses Acquired In FCC Auctions**

Nextel's proposal states that as part of their exchanging of spectrum, only they would receive licenses in the vacated NPSPAC 6 MHz Band. Thus, all other EA licensees (who acquired their licenses via FCC auctions) in the "General Category" and "Lower 80 Channel" blocks would be moved to the 700MHz and/or 900MHz Bands. Nextel suggests that the fact that these licenses were acquired via FCC auctions deserves no consideration.

We strongly disagree with this assumption and point to the FCC's record on this issue. In a recent FCC report to Congress ("*Alternative Frequencies for use by Public Safety Systems*" – January 2002), the FCC states (at page 16) —"*Generally, making auctioned spectrum available to others after the competitive bidding process has been completed and licenses granted could drastically impact the auction winners and adversely affect the integrity of the Commission's auction process.*"

Respectfully submitted,

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## Exhibit A

Frequency		Current Usage	
Mobile	Base	Usage	# of MHz
806 MHz	851 MHz		
		SMR (General)	
809.75 MHz	854.75 MHz		7.5 MHz
		B/ILT	V PS- 2 ch. V
		B/ILT	V PS- 2 ch. V
		B/ILT	V PS- 2 ch. V
		B/ILT	V PS- 2 ch. V
811 MHz	856 MHz	B/ILT	V PS- 2 ch. V
		SMR	V PS- 3 ch. V
		B/ILT	V PS- 3 ch. V
		SMR	V PS- 3 ch. V
		B/ILT	V PS- 3 ch. V
		SMR	V PS- 3 ch. V
		B/ILT	V PS- 3 ch. V
		SMR	V PS- 3 ch. V
		B/ILT	V PS- 3 ch. V
		SMR	V PS- 3 ch. V
		B/ILT	V PS- 3 ch. V
		SMR	V PS- 3 ch. V
		B/ILT	V PS- 3 ch. V
		SMR	V PS- 3 ch. V
		B/ILT	V PS- 3 ch. V
		SMR	V PS- 3 ch. V
		B/ILT	V PS- 3 ch. V
		SMR	V PS- 3 ch. V
816 MHz	861 MHz	B/ILT	V PS- 3 ch. V 12.5 MHz

